



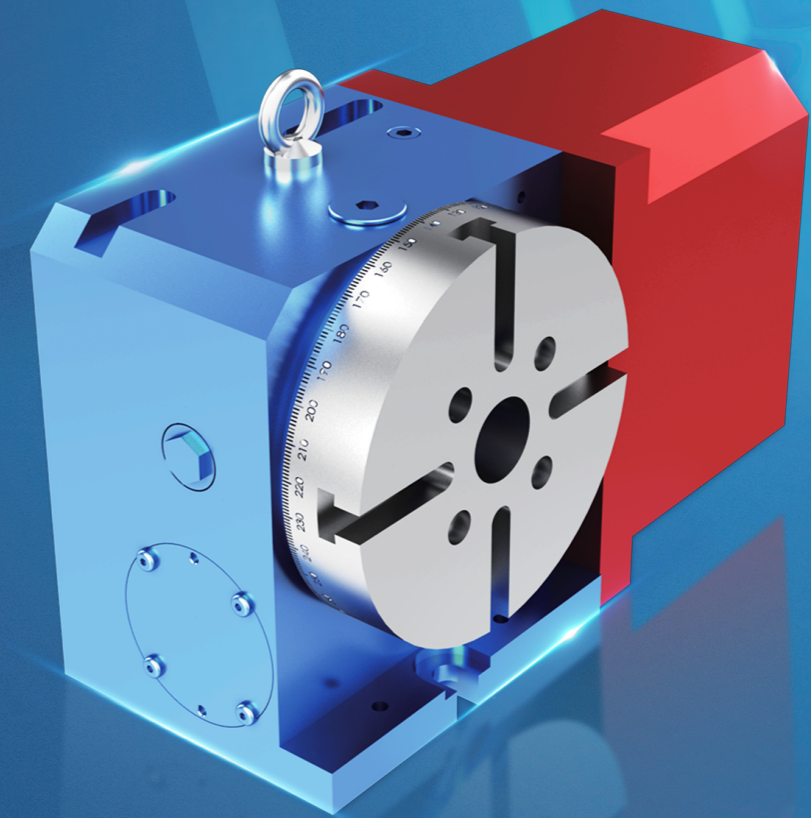
LinkedIn



Direct Industry



Official Website



Contents

Company Profile / 01

Core Control Technology / 02

Worm Gear 4th Axis / 04

Worm Gear 5th Axis / 08

Accessories / 12

> Company Profile

Smartguy Intelligent Equipment Co., Ltd. is a National High-tech Enterprise dedicated to providing intelligent manufacturing solutions and key components. As a wholly-owned subsidiary of Conprofe Technology Group Co., Ltd., Smartguy shares the same vision as Conprofe - "Converging of Global Resources, Professional as Industry Leader" and holds on to "Precision, Intelligent and Efficient" advanced manufacturing.

Revolving around high-end machine tool applications, the company has forged a product system in Standardization, Automation and Intelligent Development with its patents and intellectual property rights. Under the system are two major product lines - Precision Parts and Automation, which cover five main product series of 4th-/5th Axis Rotary Tables, CNC Tool Magazines, Intelligent Logistics & Warehousing, Flexible Manufacturing Units and Unattended Factory Solutions.

Renowned customers have widely used these products in consumer electronics, semiconductors, automotive, aerospace, medical and general precision manufacturing industries.

Smartguy perseveres in laying a solid foundation in the domestic market while keeping its eyes open to the world. Headquartered in Guangzhou Science City, Smartguy has established a network of R&D, sales and service in Hong Kong, Taiwan, the United States, South Korea, India, Vietnam, etc. Along with its products sold to over 70 countries and regions across six continents, Smartguy's intellectual properties have covered over 30 countries and regions. The company's integrated distribution of R&D, production, sales and service around the globe has gradually come into being.

With its solid technical competencies, Smartguy has established a provincial-level Engineering Technology Center and developed over 500 core technology patents. Its primary product technologies have reached an internationally advanced level, as assessed and acknowledged by experts led by members of the Chinese Academy of Engineering (CAE).

Furthermore, Conprofe has successively been granted the Guangdong Scientific and Technological Progress Award (First Prize), Guangdong Patent Award (Silver), China Patent Award (Excellence) and has been honored as Cultivated Enterprise for Guangdong Strategic Emerging Industries (Intelligent Manufacturing), Guangzhou "Future Unicorn" Innovation Enterprise (Advanced Manufacturing), etc.



Core Control Technology

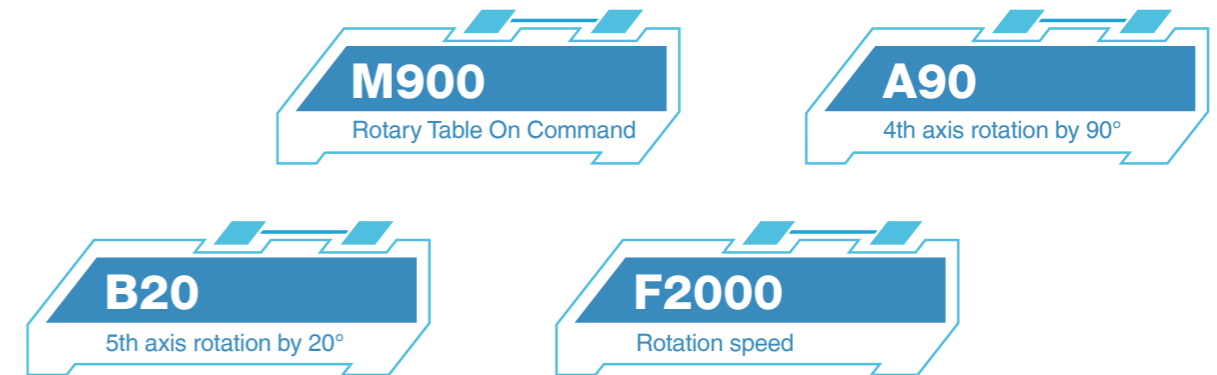


> Comp

- > Perfectly compatible with the CNC machine tool systems of Fanuc, Mitsubishi, Siemens, Brother, Jingdiao, etc.
- > No external device or point restriction. Direct communication with the machines, enabling rotation at any angle.
- > Backlash and single angle compensation, improving machining precision.



Example of Product Program Control Code and Its Meaning



Advantages of UCS Controlling System:

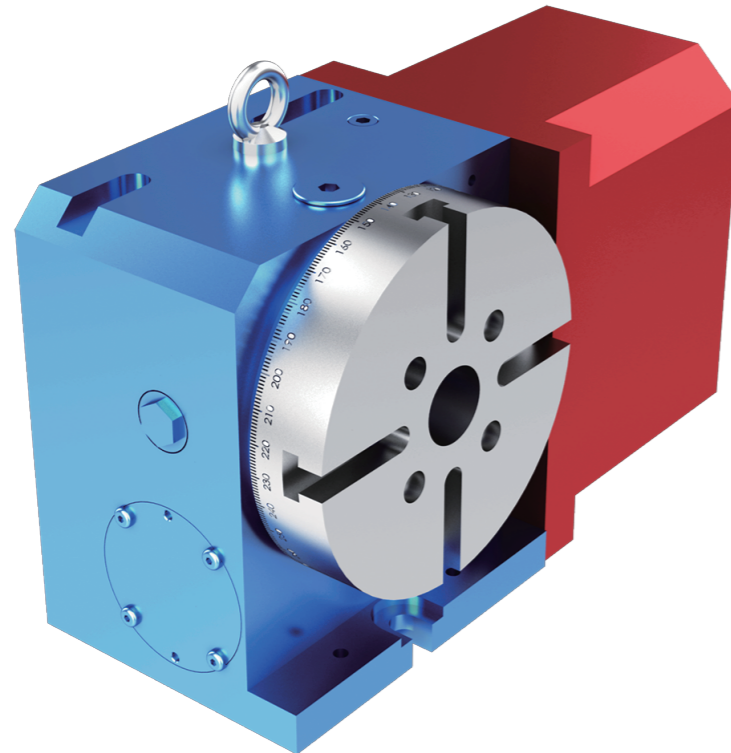
- > Control by direct order from 4th or 5th axis, with angle and speed specified as desired.
- > Direct and convenient installation, not limited by the machine tool control system and the 4th axis permissions, with no need to change the machine tool's internal parameters.
- > Communication with the machine tool for faster and safer closed-loop control.
- > Angular compensation available in conjunction with the probe.



Disadvantages of Traditional I/O Control:

- > Unstable I/O signals, incurring risk from external signal interference.
- > Angle control restricted by the limited machine I/O ports while requiring modifications to the machine tool ladder diagram, which can cause machine tool instability.
- > Angular compensation not available after probe measurement.
- > Inflexible control methods. Necessary pre-set angles triggered by I/O signals to perform 4th and 5th axis functions for universal control; risk of misremembering easily incurred by diverse compound angles and I/O combinations. Manual angle setting required in the background for part switching, bringing a heavy workload and tedious settings.

> Worm Gear 4th Axis Series



> Features

High Rigidity

- > Double-lead, double-bearing design for heavy-duty cutting.
- > 35%-45% gear engagement surface, conducive to heavy cutting resistance, and good wear resistance in continuous machining. No need to adjust the backlash in 1-2 years.

High Precision

- > Standard absolute encoder for high-precision dividing, original software compensation algorithm to improve the machining accuracy of high-hardness materials, allowing for fine compensation and accuracy of segmentation within 15s (standard 25arcsec).

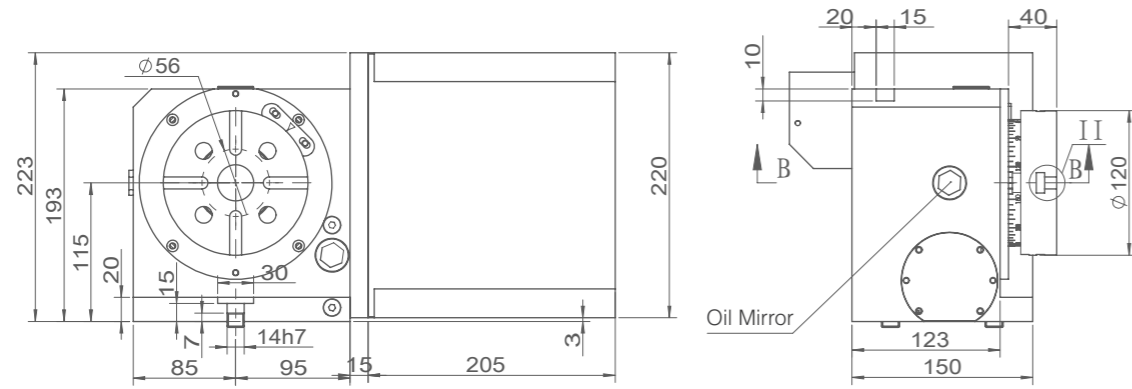
Safe and Reliable

- > Easy and safe operation, strong braking effects, and compact structure featuring efficient pneumatic locking and standard solenoid valve.

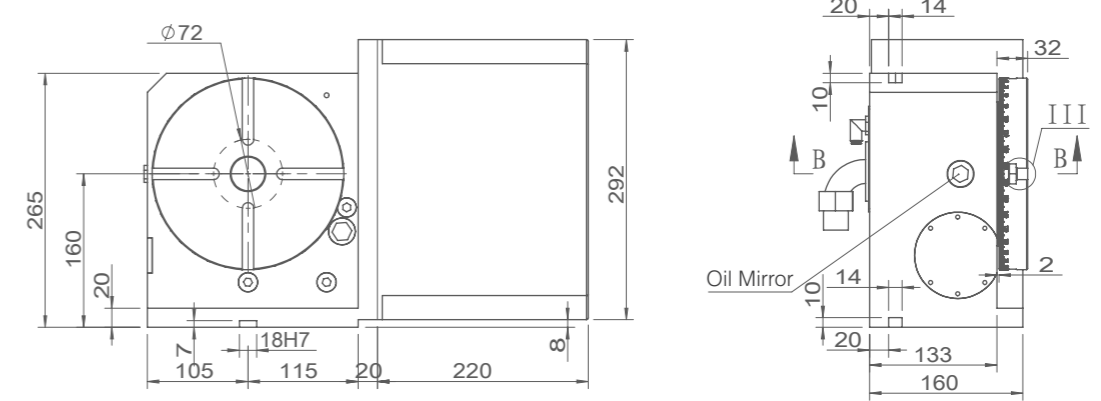
> Parameters

Specification	Model	FWS-120B	FWL-170B	FWS-170B	FWS-200B	FWS-250B	FWS-320B
Disc Diameter (mm)		Ø120	Ø170	Ø170	Ø200	Ø250	Ø320
Height of Vertical Center (mm)		115	135	135	160	185	210
Thru-hole Diameter (mm)		Ø30	Ø35	Ø35	Ø35	Ø70	Ø110
Width of T-slot		10H7	12H7	12H7	12H7	12H7	14H7
Width of Positioning Slot (mm)		14H7	18H7	18H7	18H7	18H7	18H7
Model of Servo Motor	Mitsubishi	HG75	HG75	HG104	HG104	HG154	HG204
	Fanuc	aiF2/βis4	aiF2/βis4	aiF4/βis8	aiF4/βis8	aiF8/βis12	aiF12/βis22
	Siemens	1FK7042	1FK7042	1FK7060	1FK7060	1FK7060 1FK7063	1FK7083
	Smartguy	SGL-751DMC	SGL-751DMC	SGL-102BK	SGL-102BK	SGL-152BK	SGL-202BK
Reduction Ratio		1:60	1:60	1:90	1:90	1:180 1:90	1:180 1:90
Minimum Dividing Unit (deg)		0.001°	0.001°	0.001°	0.001°	0.001°	0.001°
Rated Torque (Nm)		118	150	225	225	441	741
Rated Speed (rpm)		50	50	33.3	33.3	16.6 33.3	16.6 33.3
Pneumatic Brake Torque (Nm)		60	60	120	120	460	696
Hydraulic Brake Torque (Nm)		235	235	490	490	921	1391
Accuracy of Segmentation (arcsec)	Positioning	±30	±12.5	±12.5	±12.5	±7.5	±7.5
	Repetitive	±4	±4	±4	±4	±4	±4
Maximum Load (Kg)		35	50	75	100	125	150
Net Weight (Kg)		28	43	70	84	124	210

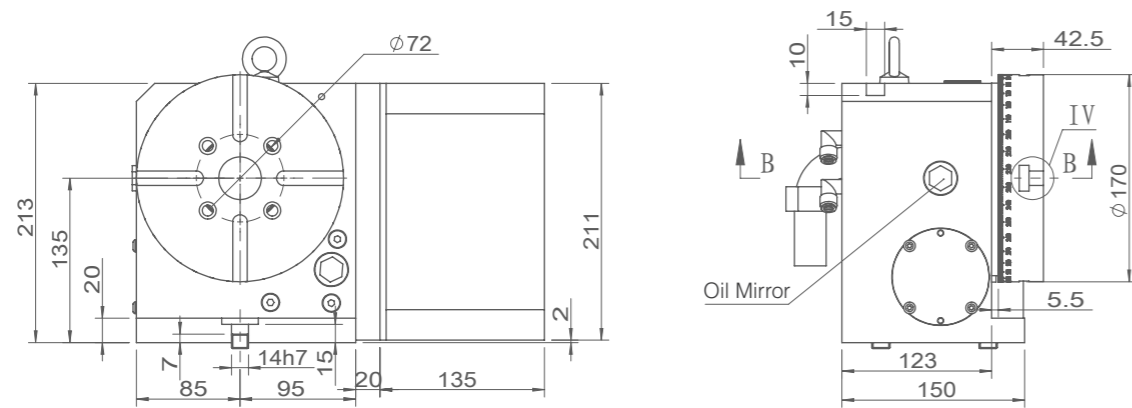
> Product Size



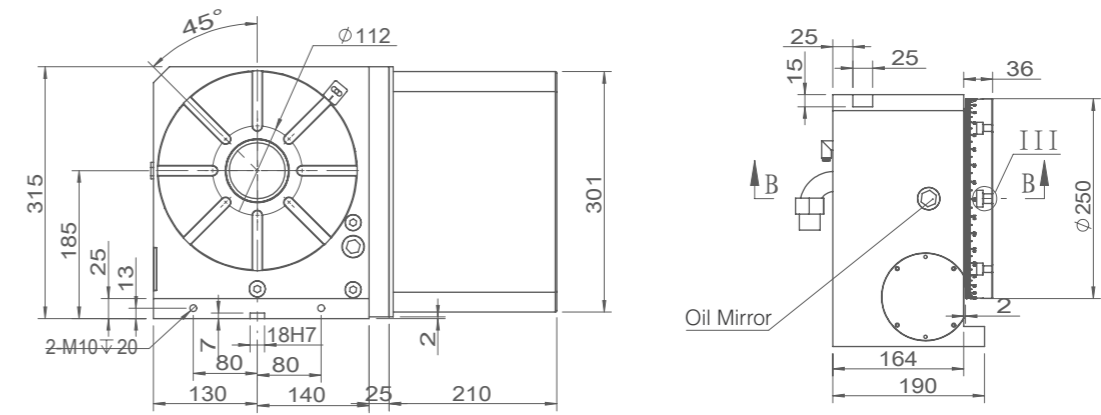
< FWS-120B >



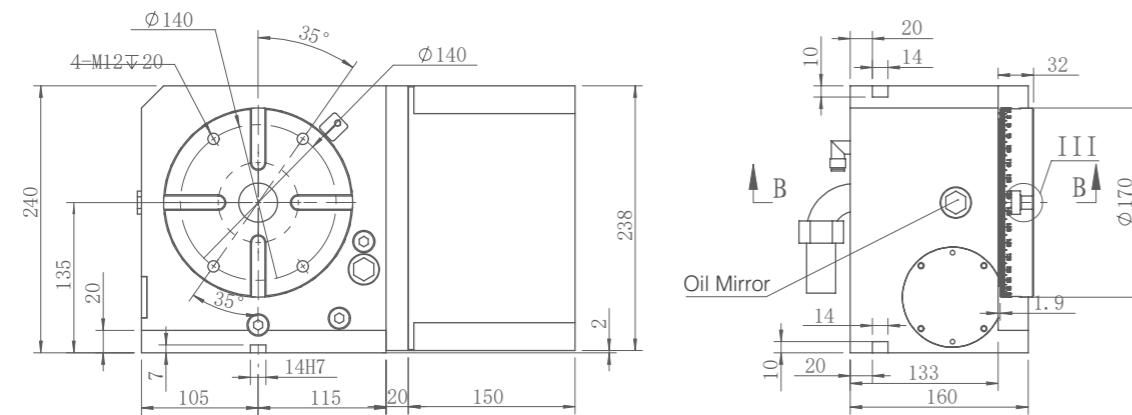
< FWS-200B >



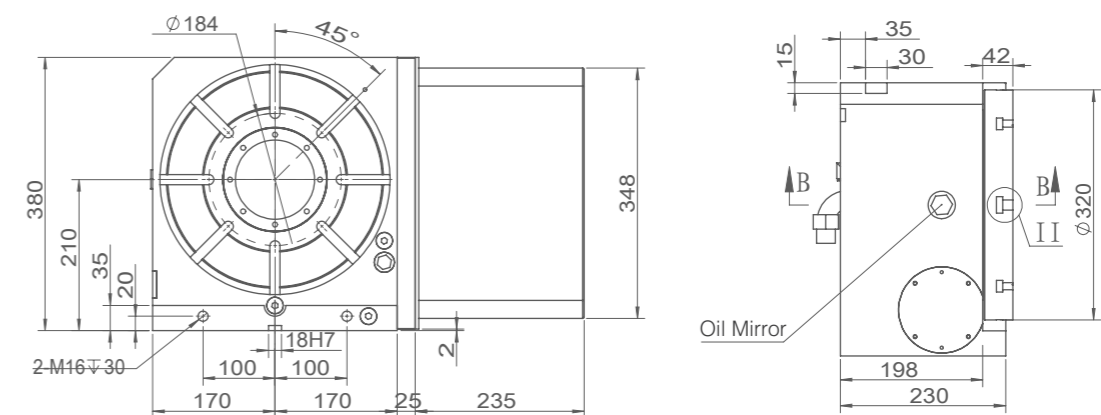
< FWL-170B >



< FWS-250B >

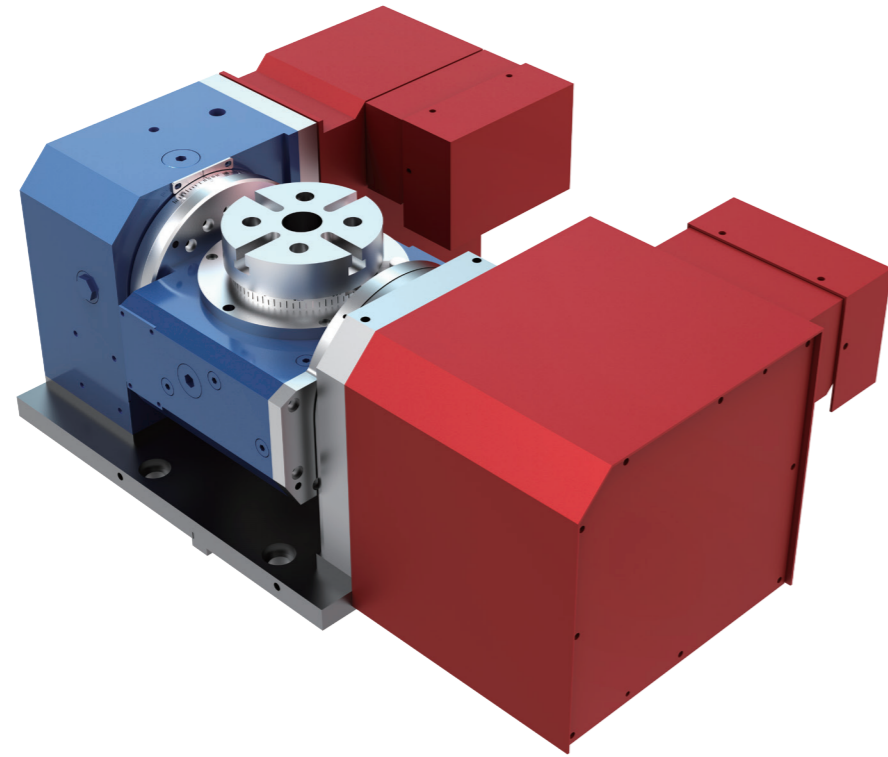


< FWS-170B >



< FWS-320B >

> Worm Gear 5th Axis Series



> Features

Large Torque

- > Highly rigid reducer structure, larger torque output, and stable cutting for higher machining quality.

Wide Application

- > Central hole design for easy wiring and piping.

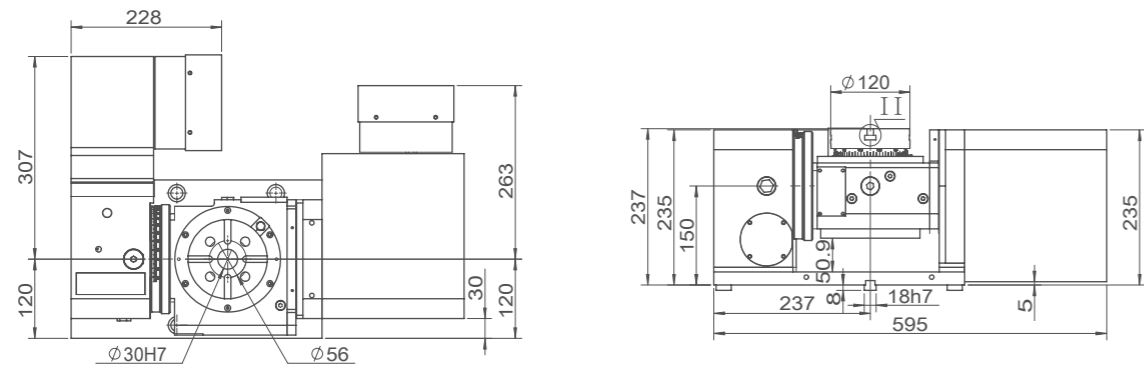
High Rigidity

- > Double-lead, double-bearing design for heavy-duty cutting.
- > 35%-45% gear engagement surface, conducive to heavy cutting resistance, and good wear resistance in continuous machining. No need to adjust the backlash in 1-2 years.

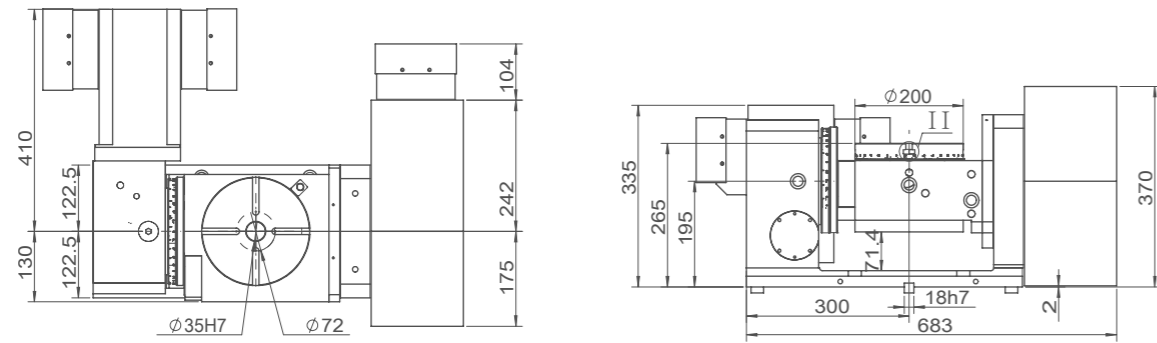
> Parameters

Specification	Model	DH2-S120B		DH3-S200B		DH4-S250B		DH5-S320B	
Disc Diameter (mm)		Ø120		Ø200		Ø250		Ø320	
Height of Vertical Center (mm)		150		210		225		255	
Thru-hole Diameter (mm)		Ø30		Ø35		Ø70		Ø110	
Width of T-slot (mm)		10H7		12H7		12H7		14H7	
Width of Positioning Slot (mm)		/		/		/		/	
Type of Servo Motor		Rotation Axis	Tilting Axis	Rotation Axis	Tilting Axis	Rotation Axis	Tilting Axis	Rotation Axis	Tilting Axis
Model of Servo Motor	Mitsubishi	HG75	HG75	HG104	HG154	HG104	HG154	HG154	HG154
	Fanuc	aiF2	aiF2	aiF4	aiF8	aiF4	aiF8	aiF8	aiF12
	Siemens	1FK7042	1FK7042	1FK7060	1FK7063	1FK7060	1FK7063	1FK7080	1FK7083
Reduction Ratio		1:72	1:120	1:90	1:180	1:90	1:180	1:180	1:180
Minimum Dividing Unit (deg)		0.001°	0.001°	0.001°	0.001°	0.001°	0.001°	0.001°	0.001°
Rated Torque (Nm)		172	287	396	1680	396	1680	1680	3020
Rated Speed (rpm)		41.6	25	33.3	16.6	33.3	16.6	16.6	16.6
Pneumatic Brake Torque (Nm)		120	120	250	250	500	500	710	710
Hydraulic Brake Torque (Nm)		240	240	500	500	1020	1176	1420	1420
Accuracy of Segmentation (arcsec)	Positioning	±15	±30	±12.5	±30	±7.5	±30	±7.5	±15
	Repetitive	±4	±8	±4	±8	±4	±8	±4	±8
Maximum Load (Kg)		20		50		60		100	
Net Weight (Kg)		105		240		280		505	

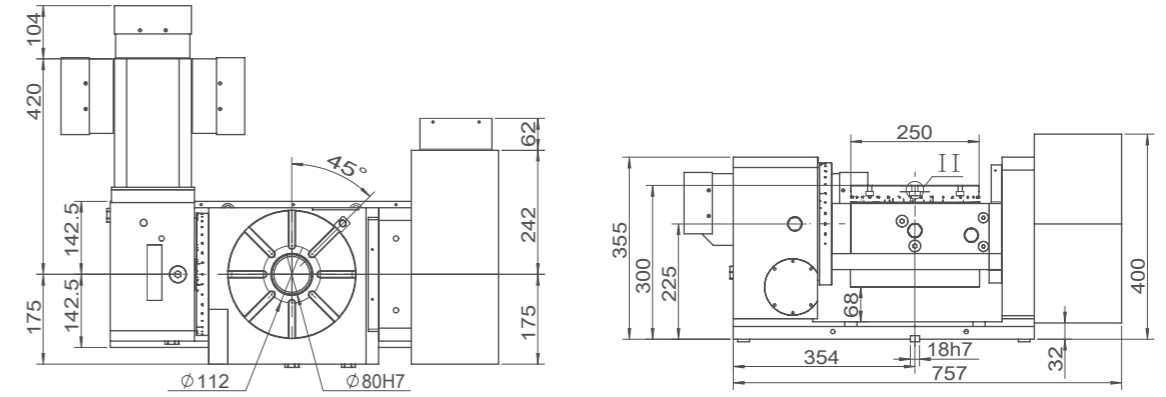
> Product Size



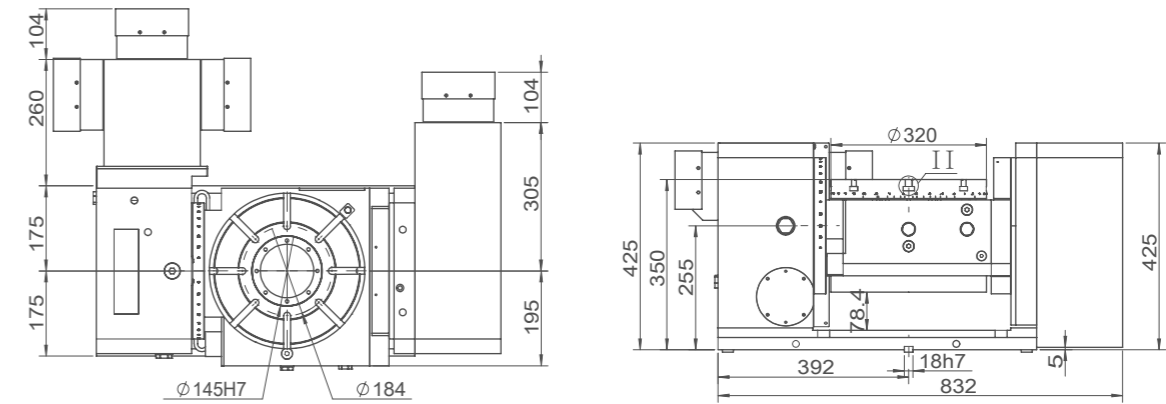
< DH2-S120B >



< DH3-S200B >



< DH4-S250B >

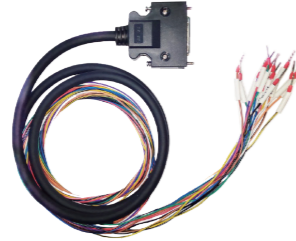


< DH5-S320B >

> Accessories



>> Three-axis handwheel <<



>> IO Control Wire <<



>> Pneumatic-hydraulic Conversion Unit <<



>> Handwheel Wire <<



>> Communication Wire <<



>> Battery Wire <<

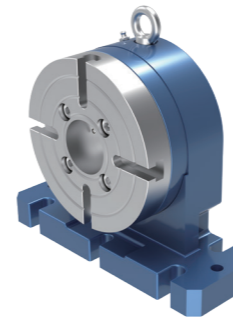
> List of Accessories

Name	Model	Name	Model
Three-axis handwheel	BZJ0009-D01-P01-X3/	Communication Wire (FANUC)	BZJ0012-D01-P02-X5
Handwheel Wire (one to two)	BZJ0008-D01-P02-X7	Communication Wire (Brother)	Brother one to two
Human-machine Touch Screen	R30200018	Communication Wire (Mitsubishi)	BZJ0015-D01-P02-X5
Pneumatic-hydraulic Conversion Unit	8-60CC	Communication Wire (Siemens)	BZJ0068-D01-P01-X1
IO Control Wire	BZJ0003-D01-P01-X3	Battery Wire	ENCCG-(4)-GU-BT

> Selection



>> Quick Change at Zero Point <<

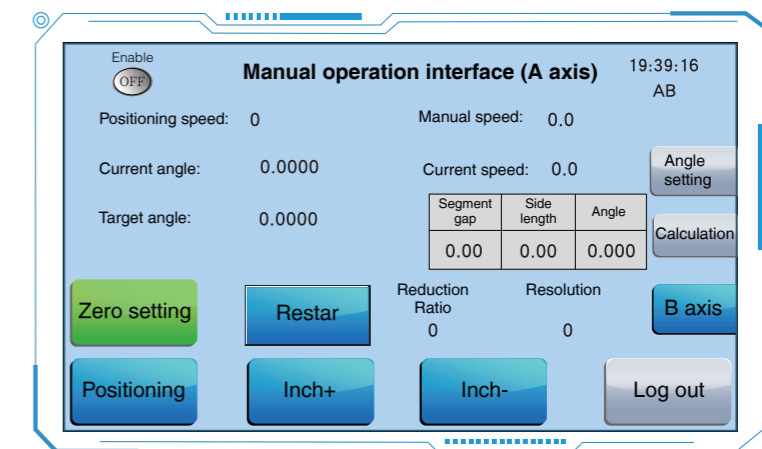


>> Tailstock <<

Item	Name	Quick Change at Zero Point		
		SGI-90	SGI-120	SGI-138
Clamping force (KN)		12.5	25	40
Brake Release Pressure (bar)		6	6	6
Repeatability Precision (mm)		0.005	0.005	0.005
Weight (Kg)		0.72	1.84	2.74

Specification	Name	Tailstock		
		TS-125B	TS-170B	TS-200B
Disc Diameter (mm)		Ø125	Ø170	Ø200
Center Height (mm)		110	135	160
Total Height (mm)		176	235	260
Width of T-slot (mm)		12H7	12H7	12H7
Width of Positioning Slot (mm)		14H7	14H7	18H7
Base Length (mm)		160	250	280
Base Width (mm)		86	96	96
Thru-hole Diameter (mm)		Ø16	Ø22	Ø32

> Human-machine Touch Screen



> Features

- > Attachable to the top of the machine panel for real-time monitoring of angles and speeds in the 4th and 5th axes.
- > Manual operation interface, convenient for 4th or 5th axis running and calibration.
- > Setting, modification and commissioning of the drive parameters on the parameter setting interface.